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THE LEISHMAN-DONOVAN BODY

Sir Patrick MANSON & G.C.LOW.

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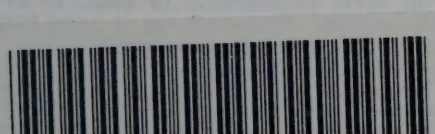
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sparingly met with. In one case none could be found, but the notes of the case reported that the patient was improving and was expected to recover. In the remaining case the slide was spoilt in trying a new fixing agent. Since these results were obtained, Dr. Bentley of Assam has announced in the *Indian Medical Gazette* that he has also found these bodies in kala-azar cases, and has therefore abandoned his recently-expressed Malta fever theory of the disease which I showed was based on serum tests with too low dilutions to be of any value, while in two series of cases I got partly negative results, since which similar negative reactions have been obtained at the Army Medical School laboratory in another series of kala-azar bloods sent by Dr. Price. These parasites, then, are certainly to be found in kala-azar, and should they prove to be the actual cause of this disease the matter will be one of great practical importance, for the measures recommended by me, and very successfully carried out by Dr. Dodds Price and others, both for the suppression of the disease by segregation measures,[10] and [11], and the very marked lowering in the mortality produced by more efficient treatment with quinine, should be equally valuable in the treatment of the sporadic form of the affection. Still more important from this point of view is the demonstration beyond the possibility of dispute by Dr. Price[12] of the certain action of quinine as a prophylactic against kala-azar, for when he first put into operation the segregation measures he lost hospital assistants and menials of the infected camp from the disease with great regularity, until he started, now several years ago, dosing them all regularly with quinine, since which he has not lost one, except a man who had already contracted the disease before this measure was started. A drug which is such a perfect prophylactic can hardly fail to have some curative action, although it often fails in advanced cases, and must be pushed in early ones to be effective, as I urged several years ago in my original report on the disease. I lay stress on this point because Major Donovan says that quinine is of little use in the disease. Now that we have a method of diagnosing the affection in the earlier stages quinine should be pushed as soon as possible before the patient reaches a cachexial state, and his total leucocytes, and still more the phagocytic polynuclears, are reduced to but a small fraction of their proper numbers, as I heve previously pointed out, is so commonly the case in the most hopeless of these chronic fevers.[4] and [6].

With regard to the bodies themselves, I can find no difference between those seen in the sporadic form in Dinajpur, and also quite recently in Calcutta in cases admitted to the Medical College Hospital as "malarial cachexia," and those I have found in kala-azar, while both agree clearly with specimens kindly shown me by Major Leishman in London, and sent me by Major Donovan from Madras, as well as those depicted by Manson and Low still more recently in a case from Sylhet.[7] In view of the great differences of opinion as to the nature of the parasites among leading medical authorities, it is useless to add any more to those already expressed, especially as further forms doubtless remain to be discovered before the life-history of the organism can be made out fully. That an asexual form of sporulation goes on in the spleen appears certain, but more than that I am not prepared to say at present. Nothing resembling an adult trypanosoma has yet been been seen.

I have also recently visited the Kola-Lukh area but found the outbreak had died out, only recovering cases being seen. It is worthy of note that nearly all the Dinajpur cases were found only about forty miles from the Kola-Lukh area. I would also like to point out that the discovery of a slightly different form of protozoan parasite than the present known malarial ones in both "malarial cachexia" and kala-azar does not *per se* clear up the mystery of the origin of the spreading epidemic form of the disease in Assam from the endemic form in Lower Bengal.

In my original report I stated that I had expected to have met with a different form of plasmodium from those of ordinary malarial fevers, and for this purpose examined a series of cases of commencing fever in kala-azar-infected houses so as to get them in the earliest stages, but failed to find any differences in the parasites met with in the peripheral blood from those of malaria (spleen puncture, unfortunately, not having been done), except in kala-azar they "appeared to be less frequently pigmented, but the difference was not sufficiently striking to allow of them being differentiated by it." Further, "I never came across any crescent forms." If the new organisms are piroplasms, as suggested by Laveran, then some of the parasites I saw in the peripheral blood may be an intracorpuscular form of the parasite, although many of them were undoubtedly pigmented malarial organisms, which were met with throughout every stage of the disease in different cases, although often absent for a considerable time during the occurrence of the low form of fever in individual instances. In several of the Dinajpur cases recently examined the peripheral blood has showed unstained amoeboid-like bodies, usually situated in red corpuscles, which present a purple stippling with Leishman's stain, the exact nature and significance of which I am uncertain about. As I worked in Assam mainly with unstained specimens fixed with osmic acid vapour (Romanowsky and Leishman's stains not then being in general use), some of the intracorpuscular unpigmented forms then seen may possibly have been of this nature.

Of the forms met with in blood withdrawn from the spleen during life, the commonest is a small oval body slightly longer than it is brood and measuring about one-third the diameter of a red blood corpuscle in its longest axis. It has two nuclei, one of which is small and often rod-shaped and stains deeply, while the other is larger, more rounded, and less darkly stained. They are usually situated opposite each other, close to the capsule and in close contact with each other. These bodies are free in the blood and may be very scanty, but in cases with actual fever when the blood is obtained they are not infrequently very numerous, being met with in numbers in a single field of the microscope. In addition to this form, small groups of similar bodies are met with clumped together so as to closely simulate a quartan sporulating malarial parasite, while in others these are seen in the act of breaking up into the small forms. A still earlier stage of this sporulation is seen in which pairs of unequal-sized nuclei are grouped within a single cell, but no signs of subdivision are yet apparent. These last forms are somewhat larger than the longest of the single forms, and appear to be produced by a subdivision of the nuclei of the latter. I have not yet found this form in the peripheral circulation, but possibly it may be present in small numbers. I have also seen them within polynuclear white corpuscles, where they may show degenerative changes.

In conclusion, I would suggest as a suitable provisional term for the chronic fevers showing Leishman-Donovan bodies in the spleen the term "cachexial fever" until further advances allow of a more accurately descriptive name being agreed upon.

NOTE.—Since this paper was written it has been pointed out by the editor of the *Scientific Memoirs of Army Medical Officers* that the bodies recently described by Majors Leishman and Donovan were first recognized and described by Lieutenant-Colonel D. D. Cunningham, I.M.S., as occurring in Delhi boil as long ago as 1885 in a paper in Part I of the *Scientific Memoirs*. If these bodies are to be called by any one's name it should, therefore, be by that of Cunningham.

REFERENCES.

[1] BRITISH MEDICAL JOURNAL, 1903, vol. ii, p. 79. [2] BRITISH MEDICAL JOURNAL, 1902, vol, i, p. 1252. [3] Report on Kala-azar, 1897. [4] *Ind. Med. Gaz.*, November, 1902. [5] Ibid., October, 1902. [6] *Med. Chir. Trans.*, 1903, and *Lancet*, vol. i, 1903. [7] BRITISH MEDICAL JOURNAL, January 23rd, 1904. [8] BRITISH MEDICAL JOURNAL, 1903, vol. ii, p. 1261. [9] *Ind. Med. Gaz.* March, 1904. [10] BRITISH MEDICAL JOURNAL, September 24th, 1898. [11] *Med. Chir. Trans.*, 1899. [12] *Ind. Med. Gaz.*, October, 1902.

THE LEISHMAN-DONOVAN BODY.

BY

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So far the peculiar parasites associated with splenomegaly in India and other places have been found in the spleen, liver, and bone marrow, in the former two by puncture during life, and in all three *post mortem*. Lately having made sections of some of the other organs of a case which died of kala-azar in the wards of the London School of Tropical Medicine, and which presented many Leishman-Donovan bodies in the spleen, liver, and bone marrow, we have found the same parasite in the lymphatic glands from the mesentery.

Sections of the pancreas, kidney, and large and small intestine have so far shown nothing.

We record this fact now as it may be of importance in the further elucidation of the disease. We hope to publish shortly a full account of the case with photographs, and details of the arrangement of the parasites in the different organs.